

Timing of surgery following SARS-CoV-2 infection: an international prospective cohort study

By: [Nepogodiev, D](#) (Nepogodiev, D.)<sup>[1]</sup>  
Group Author(s): [COVIDSurg Collaborative](#) ; [GlobalSurg Collaborative](#)  
[View Web of Science ResearcherID and ORCID](#)

ANAESTHESIA  
Volume: 76 Issue: 6 Pages: 748-758  
DOI: 10.1111/anae.15458  
Published: JUN 2021  
Early Access: MAR 2021  
Document Type: Article  
[View Journal Impact](#)

Abstract

Peri-operative SARS-CoV-2 infection increases postoperative mortality. The aim of this study was to determine the optimal duration of planned delay before surgery in patients who have had SARS-CoV-2 infection. This international, multicentre, prospective cohort study included patients undergoing elective or emergency surgery during October 2020. Surgical patients with pre-operative SARS-CoV-2 infection were compared with those without previous SARS-CoV-2 infection. The primary outcome measure was 30-day postoperative mortality. Logistic regression models were used to calculate adjusted 30-day mortality rates stratified by time from diagnosis of SARS-CoV-2 infection to surgery. Among 140,231 patients (116 countries), 3127 patients (2.2%) had a pre-operative SARS-CoV-2 diagnosis. Adjusted 30-day mortality in patients without SARS-CoV-2 infection was 1.5% (95%CI 1.4-1.5). In patients with a pre-operative SARS-CoV-2 diagnosis, mortality was increased in patients having surgery within 0-2 weeks, 3-4 weeks and 5-6 weeks of the diagnosis (odds ratio (95%CI) 4.1% (3.3-4.8), 3.9% (2.6-5.1) and 3.6% (2.0-5.2), respectively). Surgery performed >= 7 weeks after SARS-CoV-2 diagnosis was associated with a similar mortality risk to baseline (odds ratio (95%CI) 1.5% (0.9-2.1%)). After a >= 7 week delay in undertaking surgery following SARS-CoV-2 infection, patients with ongoing symptoms had a higher mortality than patients whose symptoms had resolved or who had been asymptomatic (6.0% (95%CI 3.2-8.7) vs. 2.4% (95%CI 1.4-3.4) vs. 1.3% (95%CI 0.6-2.0%), respectively). Where possible, surgery should be delayed for at least 7 weeks following SARS-CoV-2 infection. Patients with ongoing symptoms >= 7 weeks from diagnosis may benefit from further delay.

Keywords

Author Keywords: [COVID-19](#); [delay](#); [SARS-CoV-2](#); [surgery](#); [timing](#)  
KeyWords Plus: [PULMONARY COMPLICATIONS](#); [MULTICENTER](#)

Author Information

Reprint Address:  
*NIHR Global Hlth Res Unit Global Surg, Birmingham, W Midlands, England.*  
Corresponding Address: [Nepogodiev, D](#) (corresponding author)

NIHR Global Hlth Res Unit Global Surg, Birmingham, W Midlands, England.

Addresses:

[ 1 ] NIHR Global Hlth Res Unit Global Surg, Birmingham, W Midlands, England

E-mail Addresses: [dnepogodiev@doctors.org.uk](mailto:dnepogodiev@doctors.org.uk)

Funding

Funding Agency	Show details	Grant Number
RCS Covid Research Group		
National Institute for Health Research (NIHR)		
Association of Coloproctology of Great Britain and Ireland		
Bowel and Cancer Research		
Bowel Disease Research Foundation		
Association of Upper Gastrointestinal Surgeons		
British Association of Surgical Oncology		
British Gynaecological Cancer Society		

Citation Network

In Web of Science Core Collection

3

Times Cited

Create Citation Alert

All Times Cited Counts

3 in All Databases

See more counts

20

Cited References

View Related Records

New! You may also like ... BETA

[EMERGENCY-SURGERY FOR STAB WOUND TO THE HEART.](#)  
[ANNALS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND](#) (1984 )

[Emergency surgery of the left colon.](#)  
[TROPICAL DOCTOR](#) (2005 )

[BRIETAL IN EMERGENCY SURGERY.](#)  
[ANESTHESIE ANALGESIE REANIMATION](#) (1971 )

[Perioperative medicine and mortality after elective and emergency surgery.](#)  
[EUROPEAN JOURNAL OF ANAESTHESIOLOGY](#) (2016 )

[CONSISTENT MAXIMUM LIKELIHOOD ESTIMATION USING SUBSETS WITH APPLICATIONS TO MULTIVARIATE MIXED MODELS.](#)  
[ANNALS OF STATISTICS](#) (2020 )

View all suggestions

Most recently cited by:

[Yadava, Om Prakash.](#)  
[Post-COVID elective surgery-'to be or not to be'.](#)  
[INDIAN JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY](#) (2021)

[Wijeyesundera, D. N.; Khadaroo, R. G.](#)  
[Surgery after a previous SARS-CoV-19 infection: data, answers and questions.](#)  
[ANAESTHESIA](#) (2021)

View All

Use in Web of Science

Web of Science Usage Count

1

Last 180 Days

1

Since 2013

5/18/2021

Web of Science [v.5.35] - Web of Science Core Collection Full Record

European Society of Coloproctology	
Medtronic	
NIHR Academy	
Sarcoma UK	
Urology Foundation	
Vascular Society for Great Britain and Ireland	
Yorkshire Cancer Research	

View funding text

Publisher

WILEY, 111 RIVER ST, HOBOKEN 07030-5774, NJ USA

Journal Information

Impact Factor: Journal Citation Reports

Categories / Classification

Research Areas: Anesthesiology

Web of Science Categories: Anesthesiology

See more data fields

Learn more

This record is from:

Web of Science Core Collection

- Science Citation Index Expanded

Suggest a correction

If you would like to improve the quality of the data in this record, please [suggest a correction](#).

◀ 1 of 1 ▶

Cited References: 20

Showing 20 of 20   [View All in Cited References page](#)

(from Web of Science Core Collection)

1.

Title: [not available]  
Group Author(s): American Society of Anesthesiologists  
ASA and APSF Joint Statement on Elective Surgery and Anesthesia for Patients after COVID-19 Infection   Published: 2020

Times Cited: 4

2.

Title: [not available]  
By: Andrea, A.; Stefano, A.; Francesco, C.  
Gestione della Fase Pre-Operatoria   Published: 2020  
URL: [https://www.sicm.it/storage-file/covid19/0525-LG-Pre-Op-Covid-SICM\\_PDF.pdf](https://www.sicm.it/storage-file/covid19/0525-LG-Pre-Op-Covid-SICM_PDF.pdf)

Times Cited: 1

3.

Title: [not available]  
By: Arnal Velasco, S.; Morales-Conde.  
Recomendaciones para la programaci?n de cirug?a en condiciones de seguridad durante la pandemia COVID-19   Published: 2020  
URL: [https://www.aecirujanos.es/files/noticias/165/documentos/COVID19\\_Cirugia\\_electiva\(1\).pdf](https://www.aecirujanos.es/files/noticias/165/documentos/COVID19_Cirugia_electiva(1).pdf)

Times Cited: 1

4.

[Early postoperative outcomes among patients with delayed surgeries after preoperative positive test for SARS-CoV-2: A case-control study from a single institution](#)  
By: Baiocchi, Glauco; Aguiar Jr, Samuel; Duprat, Joao P.; et al.  
JOURNAL OF SURGICAL ONCOLOGY   Volume: 123   Issue: 4   Pages: 823-833   Published: MAR 2021  
Early Access: JAN 2021

Times Cited: 4

5.

[Prediction of Postoperative Pulmonary Complications in a Population-based Surgical Cohort](#)  
By: Canet, Jaume; Gallart, Lluís; Gomar, Carmen; et al.  
Group Author(s): ARISCAT Grp  
ANESTHESIOLOGY   Volume: 113   Issue: 6   Pages: 1338-1350   Published: DEC 2010

Times Cited: 467

6.

[Development and validation of a score to predict postoperative respiratory failure in a multicentre European cohort A prospective, observational study](#)  
By: Canet, Jaume; Sabate, Sergi; Mazo, Valentin; et al.  
Group Author(s): PERISCOPE Grp  
EUROPEAN JOURNAL OF ANAESTHESIOLOGY   Volume: 32   Issue: 7   Pages: 458-470   Published: JUL 2015

Times Cited: 68

7.

[Delaying surgery for patients with a previous SARS-CoV-2 infection](#)  
Group Author(s): COVIDSurg Collaborative  
BRITISH JOURNAL OF SURGERY   Volume: 107   Issue: 12   Pages: E601-E602   Published: NOV 2020  
Early Access: SEP 2020

Times Cited: 13

8.

[Mortality and pulmonary complications in patients undergoing surgery with perioperative SARS-CoV-2 infection: an international cohort study](#)  
Group Author(s): COVIDsurg Collaborative

Times Cited: 359

[https://apps-webofknowledge-com.ezproxy.um.edu.my/full\\_record.do?product=WOS&search\\_mode=GeneralSearch&qid=1&SID=D5PJby72hUY...](https://apps-webofknowledge-com.ezproxy.um.edu.my/full_record.do?product=WOS&search_mode=GeneralSearch&qid=1&SID=D5PJby72hUY...)

2/3